Type RC3 Load Cell

Product Description

The type RC3 is a stainless steel self centering rocker column load cell with complete hermetic sealing. It is a perfect fit for use in harsh industrial environments.

Application

- Weighbridges, hoppers, tanks and silos

Key Features

- Wide range of capacities from 7.5 t to 300 t
- Stainless steel construction
- Environmental Protection IP68 with complete hermetic sealing
- Self restoring design
- High input resistance
- Calibration in mV/V/Ω

Option

- Integrated surge protectors

Approvals

- OIML approval to C1 (Y = 5 000), C3, C3 MI8 and C4 (Y = 15 000)
- NTEP approval to 6 000 intervals, Class III (for 7.5 to 75 t)
- ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22
- FM hazardous area approval

Packed Weight

Capacity	(t)	7.5	15	22.5	30	40
Weight	(kg)	1.3	1.4	1.5	3.3	3.6

Capacity	(t)	50	100	150	300
Weight	(kg)	4.5	4.7	8.5	26.5

Available Accessories

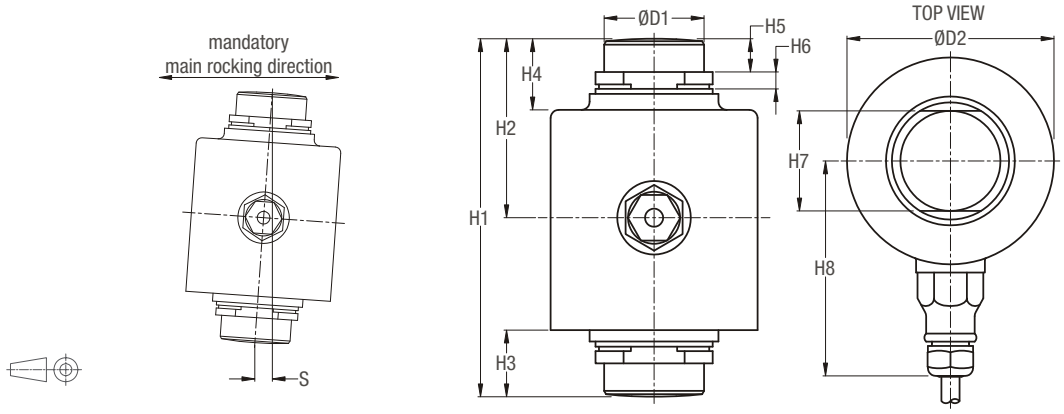
- Compatible range of application hardware
- Compatible range of electronics

Specifications

Maximum capacity	(E_{max})	t	7.5 / 15 / 22.5 / 30 / 40 / 50 / 100 / 150 / 300	7.5 / 15 / 22.5 / 30 / 40 / 50			
Minimum dead load	(E_{min})		2%*E_{max}				
Accuracy class according to OIML R60			(GP)	C1	C3	C3 MI 8	C4
Maximum number of verification intervals	(n_{LC})		n.a.	1 000	3 000		4 000
Minimum load cell verification interval	(v_{min})		n.a.	E_{max} /5 000	E_{max} /15 000		
Temp. effect on minimum dead load output	(TC_0)	%*RO/10°C	≤ ± 0.0400	≤ ± 0.0280	≤ ± 0.0093		
Temperature effect on sensitivity	(TC_{RO})	%*RO/10°C	≤ ± 0.0200	≤ ± 0.0160	≤ ± 0.0100		≤ ± 0.0080
Combined error		%*RO	≤ ± 0.0500	≤ ± 0.0300	≤ ± 0.0200	≤ ± 0.0180	≤ ± 0.0180
Non-linearity		%*RO	≤ ± 0.0400	≤ ± 0.0300	≤ ± 0.0166	≤ ± 0.0166	≤ ± 0.0125
Hysteresis		%*RO	≤ ± 0.0400	≤ ± 0.0300	≤ ± 0.0166	≤ ± 0.0062	≤ ± 0.0125
Creep error (30 minutes) / DR		%*RO	≤ ± 0.0600	≤ ± 0.0490	≤ ± 0.0166	≤ ± 0.0062	≤ ± 0.0125
Rated Output	(RO)	mV/V	2 ± 0.1%				
Calibration in mV/V/Ω (A...I classified)		%	≤ ± 0.05 (≤ ± 0.005)				
Zero balance		%*RO	≤ ± 5				
Excitation voltage		V	5...15				
Input resistance	(R_{LC})	Ω	1 150 ± 50				
Output resistance	(R_{out})	Ω	1 000 ± 2				
Insulation resistance (100 V DC)		MΩ	≥ 5 000				
Safe load limit	(E_{lim})	%*E_{max}	200				
Ultimate load		%*E_{max}	300				
Compensated temperature range		°C	–10...+40				
Operating temperature range		°C	–40...+80 (ATEX –40...+60)				
Load cell material			stainless steel 17-4 PH (1.4548)				
Sealing			complete hermetic sealing; cable entry sealed by glass to metal header				
Protection according EN 60 529			IP68 (up to 2 m water depth) / IP69K				

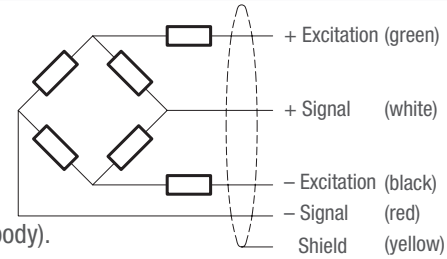
The limits for Non-Linearity, Hysteresis, and TC_{RO} are typical values.
The sum of Non-linearity, Hysteresis and TC_{RO} meets the requirements according to OIML R60 with p_{LC}=0.7.

Dimensions (in mm)



Type	H1	H2	H3	H4	H5	H6	H7	H8	D1	D2	S_{max}*	RF**
RC3-7.5 t	89	44	17	23	11	6	28	75	28	65	4.5	11 kN
RC3-15 t	89	44	17	23	11	6	28	75	28	65	4.5	20 kN
RC3-22.5 t	89	44	17	23	11	6	28	75	28	65	4.5	30 kN
RC3-30 t	140	70	26	28	13	6.5	39	84	39	81	10.5	34 kN
RC3-40 t	150	75	31	33	13	11.7	39	84	39	81	10	37 kN
RC3-50 t	178	89	32	34	17	8.5	44	94	44	99	9	51 kN
RC3-100 t	178	89	38.5	38.5	17	12	62	93.8	62	141.3	11.5	152 kN
RC3-150 t	210	105	42.7	42.7	20.6	12.8	76.2	121.5	76.2	165.1	14.5	240 kN
RC3-300 t	280	140	55.9	55.9	25	21.5	100	121.5	100	165.1	15	468 kN

* S_{max}= maximum lateral displacement of load introduction. Recommended gap 2...3 mm for 7.5...22.5 t, 3...5 mm for 30...300 t.
** RF = restoring force at S_{max} and E_{max}.

Wiring

- The load cell is provided with a shielded, 4 conductor cable (AWG 24 for 7.5 to 22.5 t / AWG 20 for 30 to 300 t). Cable jacket polyurethane
- Cable length: 12 m for 7.5 to 22.5 t
  18 m for 30 to 300 t
- Cable diameter: 5 mm for 7.5 to 22.5 t
  7.8 mm for 30 to 300 t
- The shield is floating (On request the shield can be connected to the load cell body).